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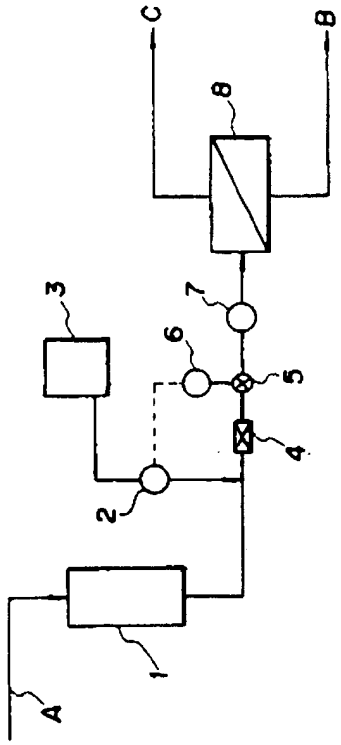
TITLE : DESALINATION BY REVERSE OSMOSIS MEMBRANE DEVICE



ABSTRACT : PURPOSE: To efficiently remove silicic acid from raw water containing the large amount of silicates, by desalinating raw water having a pH adjusted above 8 with a reverse osmosis membrane device using an alkali-resisting reverse osmosis membrane such as a polyether amide composite film.

CONSTITUTION: Raw water A is sent to a means 1 for softening hard water to remove hard components from said raw water. Thereafter, an aqueous caustic soda solution is injected from a caustic soda tank 3 into the soft water by a pump 2 to adjust the pH of said soft water above 8, pref. above 9. Said soft water having its pH adjusted is forcibly poured in a reverse osmosis membrane device 8 by a high pressure pump 7 to separately collect a desalinated filtrate B and unpermeating water C in which salts are concentrated. As a reverse osmosis membrane to be used in said reverse osmosis membrane device, an alkali-resisting reverse osmosis membrane such as a polyether amide composite film, a polyvinyl alcohol composite film, an aromatic polyamide film or a polybenzimidazole film is used.

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A - [001] 014 038 04- 141 147 151 153 231 244 245 51& 54& 623 624 642 684 720
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KS - 0004 0016 0020 0231 1279 1283 1311 2007 3264 3270
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PA - (JAOR) JAPAN ORGANO CO LTD
PN - JP59112890 A 19840629 DW198432 007pp
PR - JP19820222155 19821220
XA - C1984-083238
XIC - B01D-013/00 ; C02F-001/44
AB - J59112890 The method comprises adjusting water contg. a relatively large amount of silicic acid with alkali to give above pH 8 and desalting the resulting pH adjusted water in a device equipped with a reverse-osmosis membrane to obtain purified water.The membrane consists of complex type polyether-amide membrane, a complex type PVA membrane, complex type aromatic polyamide membrane, or complex type polybenzimidazolone membrane.
- Water to be treated was introduced into a water softening device equipped with a N type strongly acidic cation exchange resin to obtain softened water. The softened water was adjusted with NaOH to be pH 9.0. The pH adjusted water was introduced into a device equipped with a reverse-osmosis membrane to obtain purified water.(0/0)
IW - DESALINATE WATER CONTAIN SILICIC ACID RELATIVELY AMOUNT ADD ALKALI CONTACT REVERSE OSMOSIS MEMBRANE POLYVINYL ALKALINE
IKW - DESALINATE WATER CONTAIN SILICIC ACID RELATIVELY AMOUNT ADD ALKALI CONTACT REVERSE OSMOSIS MEMBRANE POLYVINYL ALKALINE
NC - 001
OPD - 1982-12-20
ORD - 1984-06-29
PAW - (JAOR) JAPAN ORGANO CO LTD
TI - Desalting water contg. silicic acid in relatively large amt. - by adding alkali then contacting with reverse osmosis membrane of e.g. polyvinyl alkaline

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[illegible] Chemical Abstracts, [illegible]umbus, Ohio, US
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101: 197574y **Desalination by reverse-osmosis membrane.** Japan Organo Co., Ltd. Jpn. Kokai Tokkyo Koho JP 59,112,890 [84,112,890] (Cl. C02F1/44), 29 Jun 1984, Appl. 82/222,155, 20 Dec 1982; 7 pp. Raw water contg. a large amt. of silicic acid is adjusted to pH ≥8 and desalinated by an app. equipped with an alkali resistant reverse osmosis membrane, e.g. a polyether–amide composite membrane, a *poly(vinyl alc.)* [9002-89-5] composite membrane, an arom. polyamide membrane, and a *polybenzimidazolone* [82492-72-2] membrane. Permeated water can be obtained in high yield and with good desalination efficiency. Thus, raw water contg. Ca, Mg, and silicic acid was softened by a strongly acidic cation exchange resin, adjusted to pH 9 by NaOH, and desalinated by using the polyetheramide composite membrane *Toray Reverse Osmosis Membrane SP 110* [92904-20-1]. Water retrieval was 76 % and its desalination efficiency was high and showed little decline even after continuous use.